

TEMPERANCE ELEMENTARY SCHOOL RAIN GARDEN

Submitted by Bill Perry, forester, Region 3, Amherst County

This spring, the Virginia Department of Forestry teamed up with the Pedlar River Institute and the Robert E. Lee Soil and Water Conservation District to construct a sizable rain garden on the site of Temperance Elementary School in Amherst County. This project was made possible by a Water Quality Improvement Fund grant from the VDOF and the generosity of many businesses and volunteers.

It came to the attention of Judy Strang of the Pedlar River Institute (PRI) that Amherst County Schools would be building a gym addition at Temperance Elementary School. This was the last of six gyms constructed at Amherst County elementary schools, and all five already constructed use conventional stormwater design. While the prototype complied with existing regulations for erosion and sediment control, it fell short of preferred site design features for water quality and quantity objectives. The Temperance gym addition thus represented an ideal opportunity to showcase low impact design (LID) benefits for stormwater quality control, groundwater recharge and functional landscaping, as compared to a conventional design. The proposed building and its site were well-suited for creating a bioretention/raingarden area that will also serve as a forested schoolyard habitat. This area will filter stormwater from the gym's roof and the surrounding paved areas that accompany this structure. Plus, being part of a school, the gym is located in a place where the bioretention area will have high visibility in the community.

Since construction was scheduled to begin in January, it was imperative that funding be secured to allow for the LID design and procurement of materials in a timely manner. While Dr. John Walker (superintendent, Amherst County Schools) was very interested in incorporating this LID design element into the school project, funding was needed to cover the immediate cost of the design change and a portion of materials cost that goes beyond the established construction budget. As a result, a Water Quality Improvement Fund grant through VDOF was obtained to help defray these added costs.

The benefits of LID site design go beyond improving erosion control, water quality and groundwater recharge. Achieving LID design for this project will create a model for the county; educate the school community, and familiarize those involved in the construction with the design and benefits of on-site stormwater treatment. The fact that conventional stormwater control measures exist on the previously built gyms will enable a clear comparison between the two approaches over time.

Williamsburg Environmental Group, an engineer firm with experience in LID design and construction, was contracted to design an end-of-pipe retention/infiltration area that was site-specific and maximizes stormwater quality control and habitat potential for the school grounds. The design interrupts the storm water pipe before it reached its planned outflow point, so that stormwater will spread out, slow down and filter into the bioretention area. VDOF used a dozer to assist in the construction of the bioretention area by grading and other site work. Mulching and planting of infiltration area was overseen by the VDOF, Robert E. Lee Soil and Water District employees, Pedlar River Institute, members of the school community, Virginia Master Naturalist volunteers, and employees of Williamsburg Environmental Group. Plantings used were donated by the Virginia Department of Forestry and other local donors. Some of the businesses whose generosity made this project possible include: Greif Brothers Riverville Plant for providing compost and mulch; Boxley Materials for providing discount rates on rock and sand;



Burley Trucking for discount rates on hauling; Environmental Erosion Control for silt fence and erosion control matting; Saunders Brothers Nursery for discount plants; Dr. Nancy Cowden for assistance in choosing the right plants for this project, and Williamsburg Environmental Group for making this project a reality.